

Aidite

EZPRINT

Complete denture work instructions



Aidite

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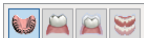
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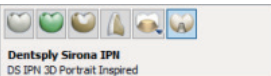
1 Design software

3shape-2023 version

2 Create an order

1.Select the full mouth teeth position as shown in the figure, type selection Dentures

Gingive gum type  + DS IPN 3D Portrait Inspired type of denture

 , click on the gum type of the right side of the plus sign, the material selection DS Lucitone Digital Print 3D Denture Resin, the type of selection DS Print

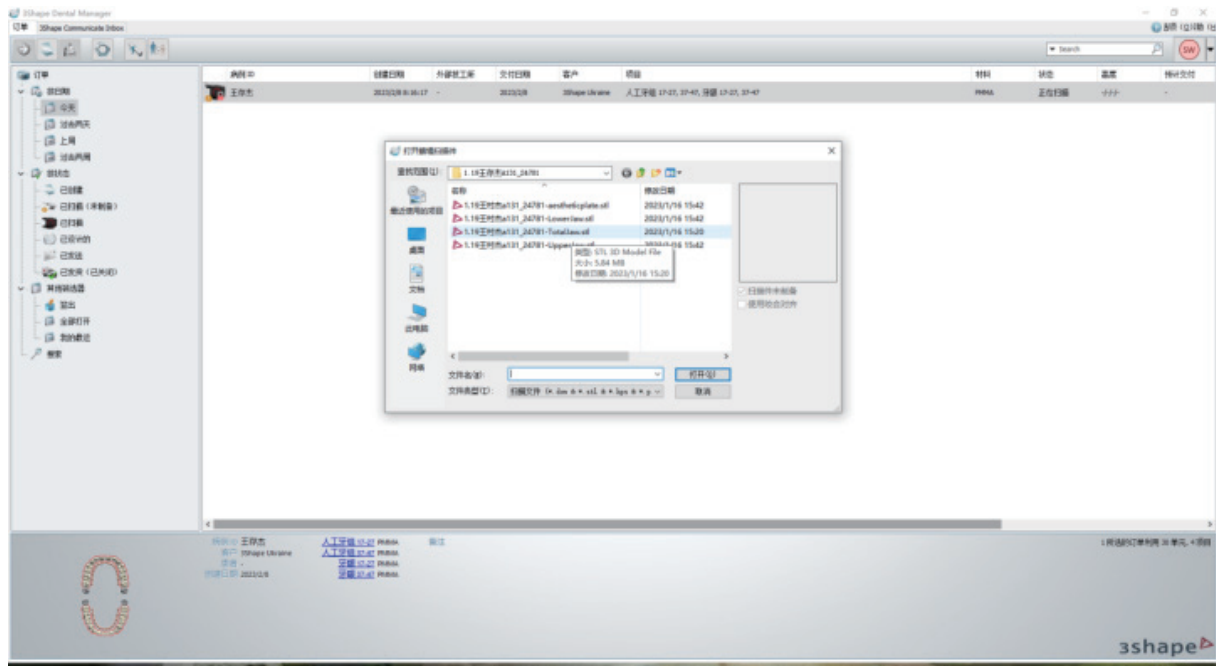
 , select the connector bridge  , click OK to

complete the order.



2.Import data:

Import the upper and lower jaw files and the wax dyke file respectively in order.

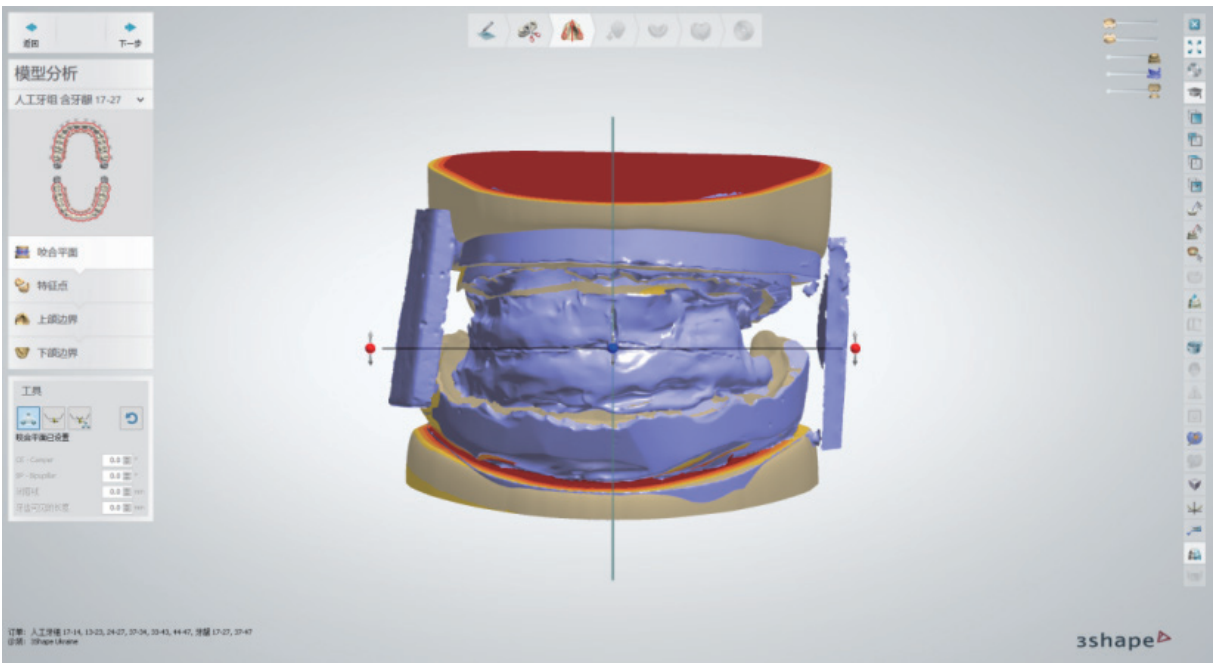


3 Model Analysis

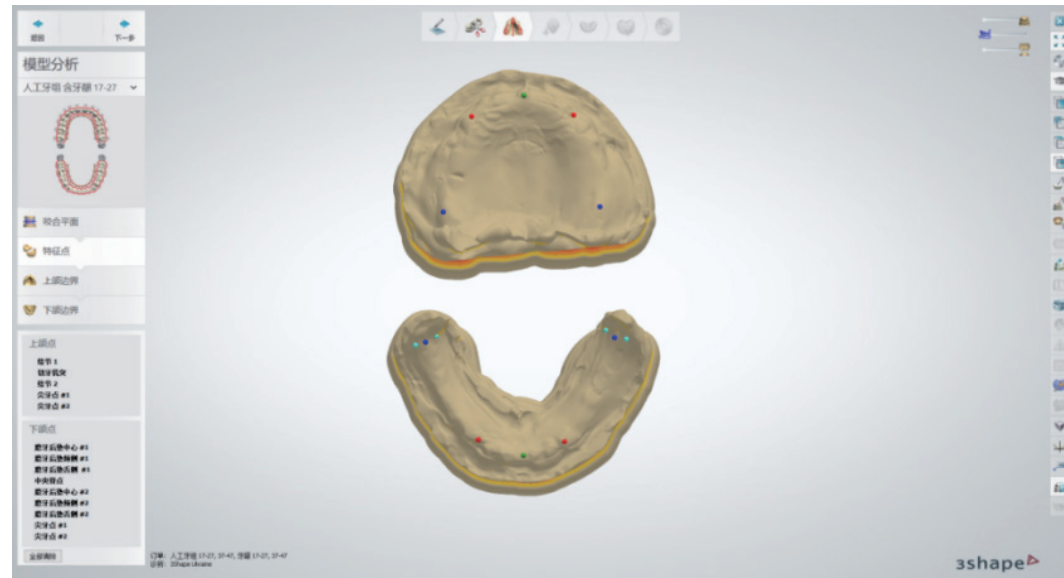
1.Occlusal Plane According to the occlusal wax embankment, use the left tool

 to click three points on the occlusal record to generate the occlusal

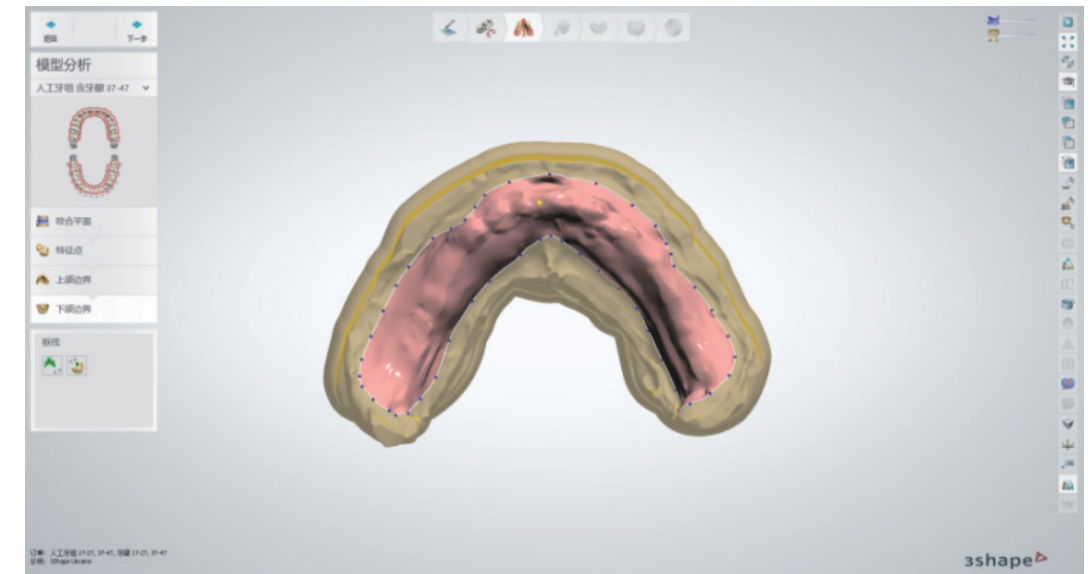
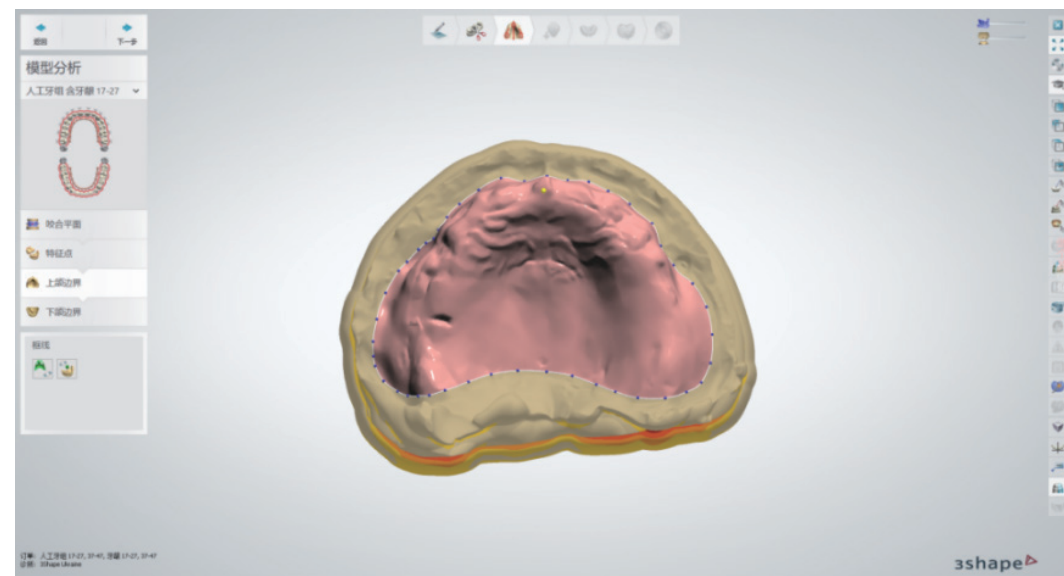
plane and adjust the position of the occlusal plane by rotating and dragging.



2. Marking feature points and marking anatomical features in the upper and lower jaws according to the cue sequence.

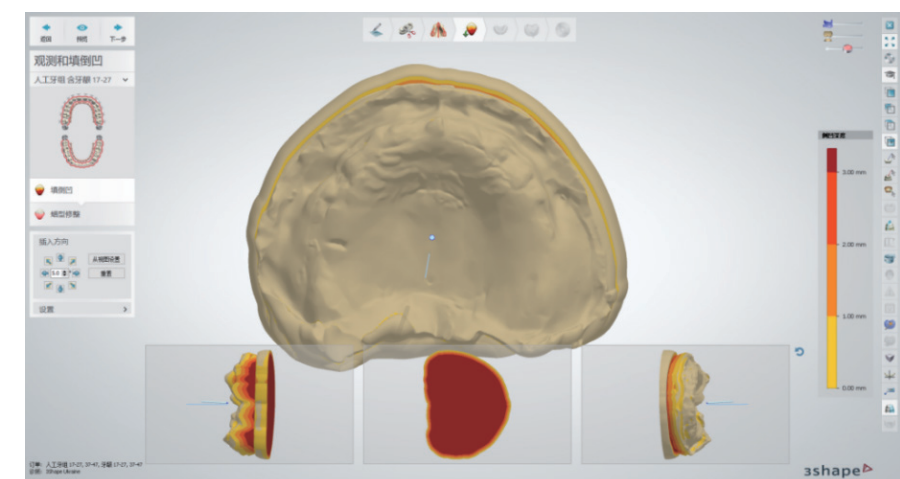


3. Upper and lower jaw boundaries were drawn upper and lower jaw edges, click on the left side of the box line button, draw the edge of the line, pay attention to avoid the buccal side of the band, the lower jaw should also pay attention to avoid the lingual side of the band, double-click to complete the completion of the border can be adjusted by dragging and dropping.

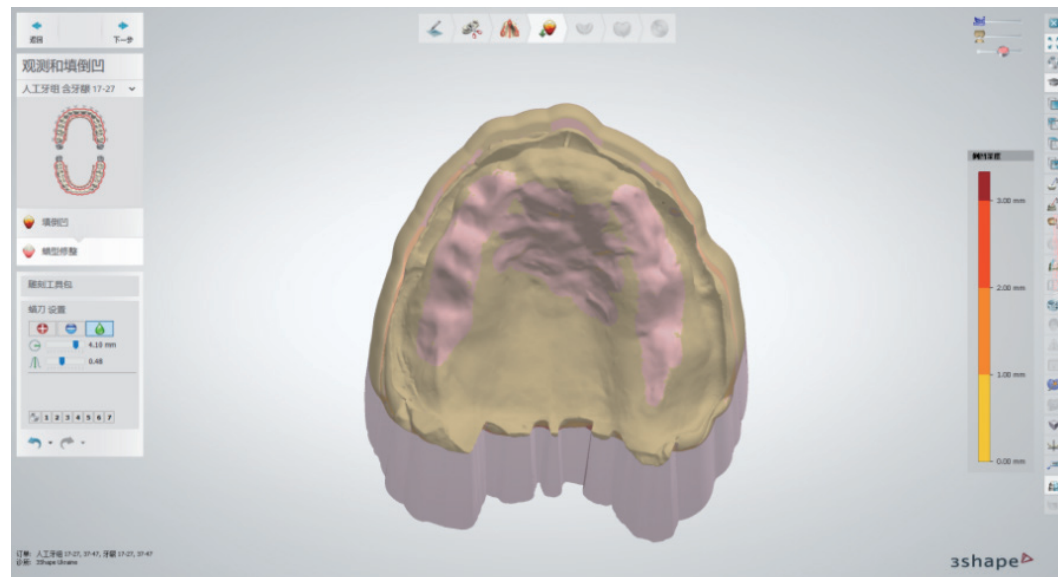


4 Observe and fill the inverted concave

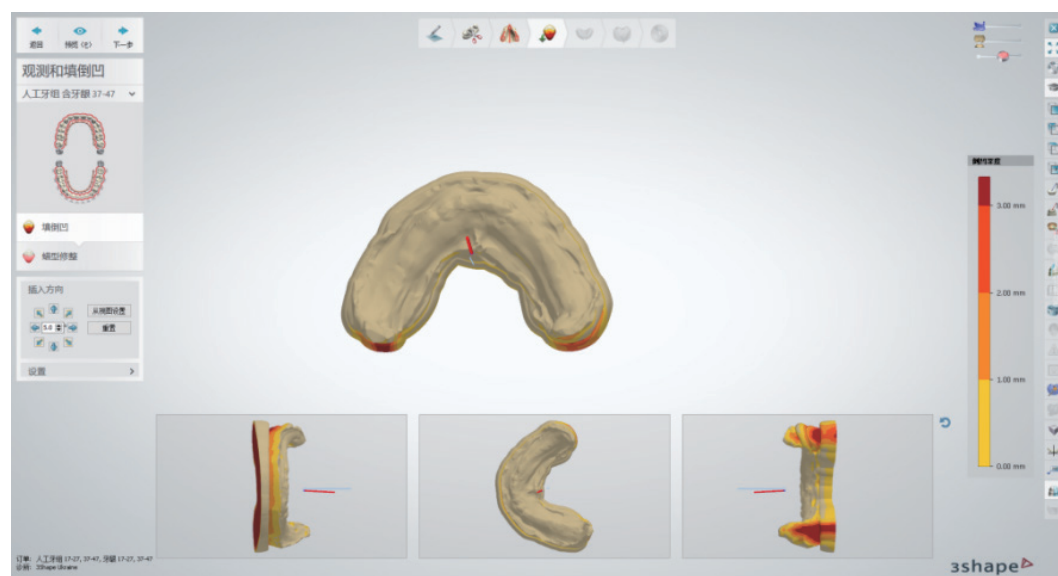
1. Maxillary fill the inverted concave choose a suitable perspective to set the direction of the seating channel, in accordance with the principle of wearing from front to back, click on the left side of the settings to set the current perspective, setup select none. The inposition channel should be selected at the edge of the base rest to avoid inverted concave, and the inverted concave inside the edge should be distributed as evenly as possible to minimize the inverted concave without affecting the inposition.



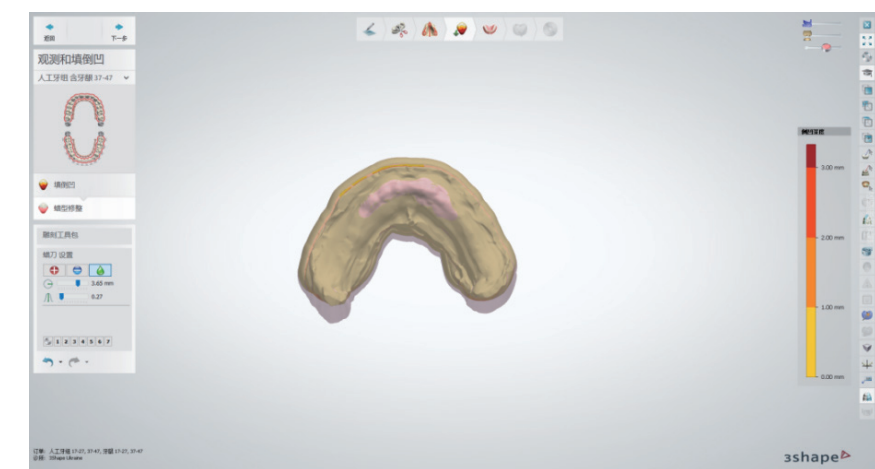
2. Wax-up trimming, inverted recesses that cannot be avoided in the direction of seating should be manually filled in to remove the inverted recesses, the wax-up of the maxilla should be trimmed using increasing, decreasing, and smoothing tools to remove the gypsum flow from the plaster model, and a good cushioning should be done in the maxillary protrusion, zygomatic protuberance, the buccal side of the maxillary tuberosity, and the incisor papillae, etc., with a thickness of cushioning of 0.5 mm.



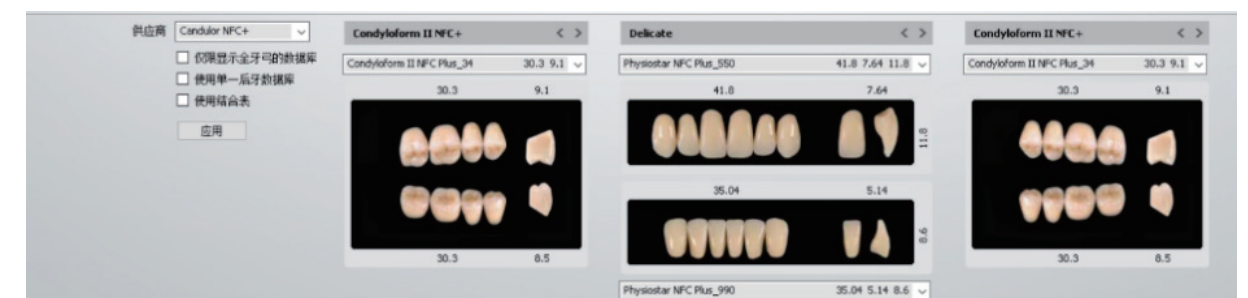
3. The lower jaw fills the inverted concavity and is seated on the same principle as the upper jaw.



4. Wax model trimming, inverted recesses that cannot be avoided in the direction of seating should be manually filled in to remove the inverted recesses, the wax model of the maxilla should be trimmed using increasing, decreasing and smoothing tools to remove the gypsum flow from the plaster model, and the cushioning should be done in the mandibular protrusion, mandibular hyoid crest and the bone tips and ribs on the alveolar ridge with a cushioning thickness of 0.5mm.



5 FD Design



1. Row of teeth, in accordance with the patient's age group, gender selection of the appropriate tooth form, and tooth size model, click on the application, row of teeth to consider the following three aspects of the principle:

a. Principle of aesthetics, complete denture to restore the physiological shape of the lower 1/3 of the patient's face, to achieve the proportion of the lower 1/3

of the face and the entire face in harmony. The beauty of full denture is mainly reflected in the arrangement of upper anterior teeth, in order to achieve the beautiful need to pay attention to the curvature of the teeth and the jaw arch form consistent, the upper anterior teeth position should be set off the fullness of the upper lip:

b. The labial surface of the maxillary anterior teeth to the midpoint of the incisor papillae is generally about 8~10mm.

c. In the elderly, the maxillary cusp roof line is flush with the posterior edge of the incisor papillae.

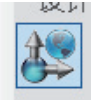
d. The labial surfaces of the maxillary cuspids are usually about 10.5mm from the lateral surface of the palatal crease.

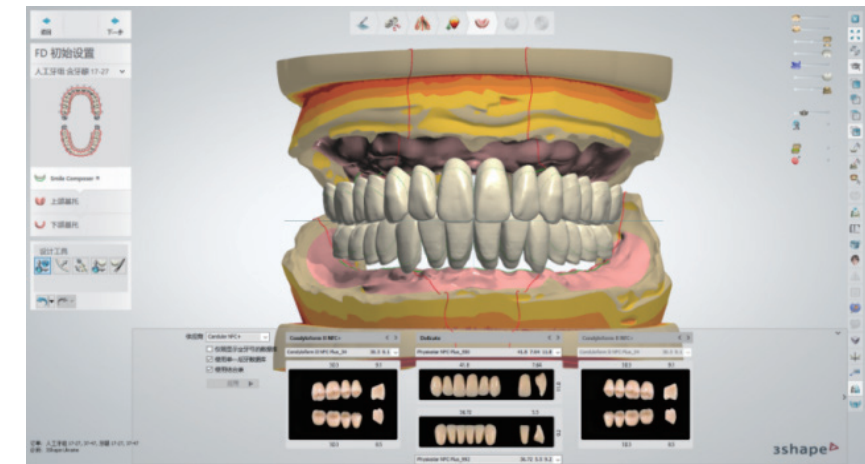
e. The incisal edges of the maxillary anterior teeth are exposed under the lip by 2 mm, less in older patients

f. When the patient has severe maxillary atrophy, the fullness of the abutments can be utilized to improve the lip support of the denture as well as the arrangement of the teeth to reflect the patient's personality.

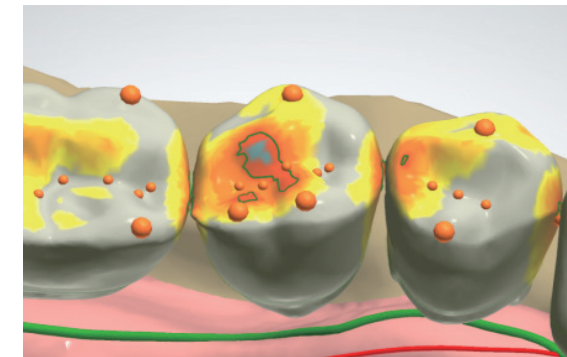
g. Principles of tissue health care, the arrangement of artificial teeth does not impede the activities of the lips, tongue and buccal muscles, and is in a position of muscular equilibrium, the posterior teeth are functionally aligned on the top of the alveolar ridge as far as possible, the anterior teeth are arranged in a shallow overlay (dentition), shallow overlay, and the front teeth do not contact when orthodontics, and are within at least 1mm of each other in the forward-extending and lateral jaw movements, and the lower teeth are to be free-sliding along the upper teeth slopes, and there is a balanced contact between the upper and lower teeth when they are free-slipping h. To reduce instability in the functional state, the nonfunctional cusp is appropriately lowered;

h. Principle of masticatory function, effective mastication and satisfactory occlusion are the main functions of artificial posterior teeth, there should be the widest cusp contact, the cusp-fossa relationship should be stabilized, and as far as possible, anatomical or semi-anatomical teeth should be selected.

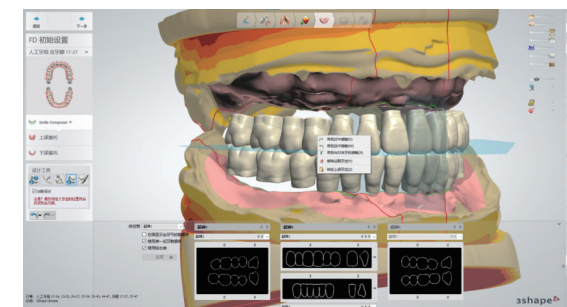
2. After choosing a suitable database can be adjusted through the tool  to adjust the horizontal and vertical two planes to place to adjust the height and position of the teeth, the use of tool  can change the arch curvature, adjusting the teeth roughly curved can be adjusted by using the tool  to arbitrarily adjust the position of the individual teeth, so that the teeth are aligned neatly and the shoulder sockets are interlaced.



(1) Adjusting the occlusion and adjacency: open the maxillary distance chart in the upper right corner, and determine the occlusal relationship with the occlusal point  by observing the color.



(2) Adjust the adjacency: Click on the tool , select a tooth, right-click and the option appears to adjust the tooth to a better adjacency.



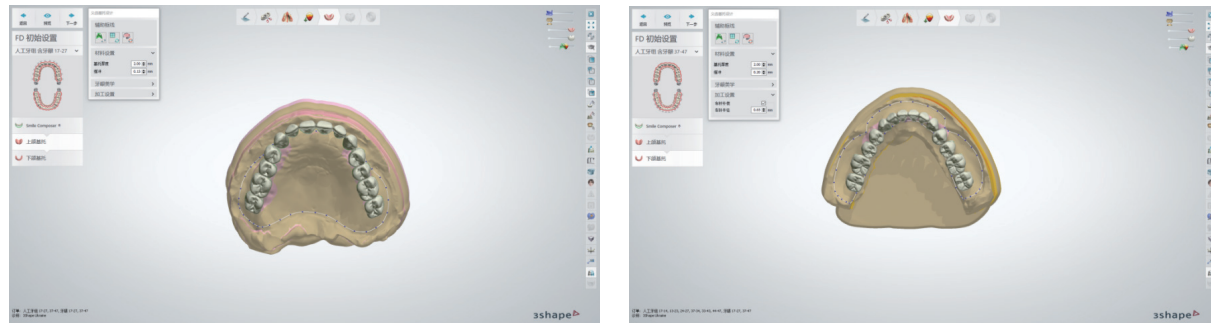
3. Drawing the margins of the abutment:

Draw the margins of the maxillary and mandibular abutments separately, with the labial margins extended into the labiobuccal sulcus, and the incision made at the tethered band.

Maxillary: Enter the maxillary tubercle, with the posterior margin stopping at the junction of hard and soft palate at the upper soft palate - 2mm behind the palatine notch, make the posterior embankment area, and extend it to the pterygomaxillary incision on both sides.

Mandible: The lingual pterygoid region should be sufficiently extended, with the posterior margin stopping 1/3-1/2 anterior to the posterior cushion of the molar, paying attention to the avoidance of the labiobuccal lateral tie.

Processing Settings: Turning Pin Compensation is open by default, requiring 3D printing of full mouth abutments is to open the upper and lower abutment turning pin compensation.



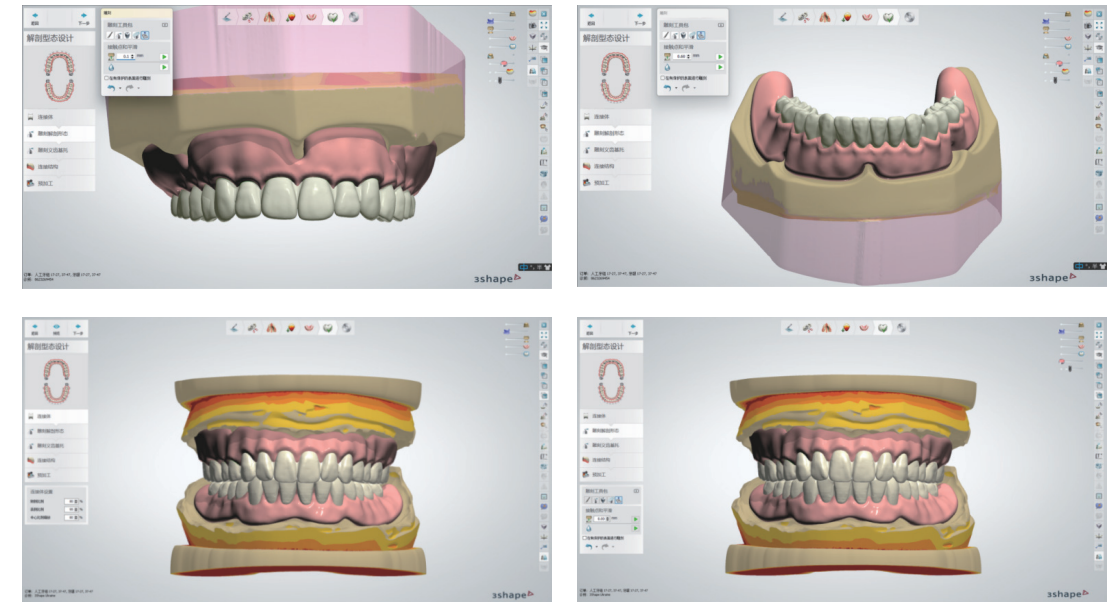
6 Sculpting Denture Bases

1. Sculpting Denture Anatomical Forms:

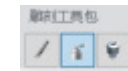


In the “Contact Points and Smoothing” tool dialog box, the maxillary

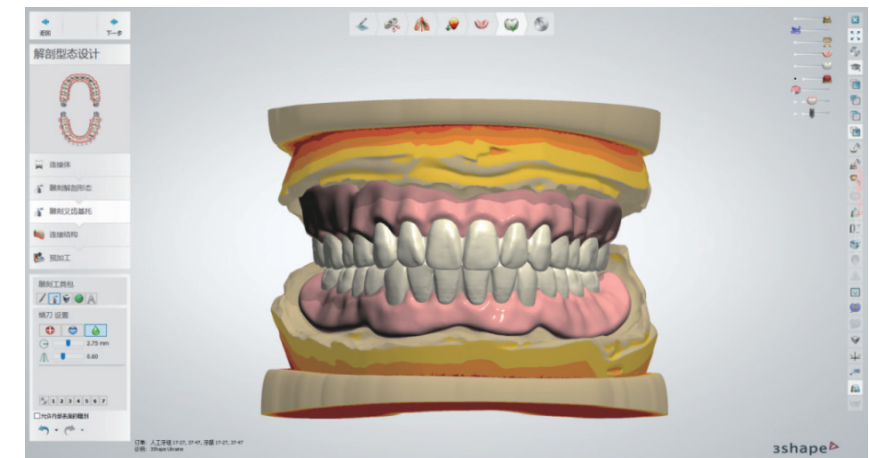
step is knocked out by 0.1 mm and the mandibular step is knocked out by 0.6 mm to fit the actual occlusion, and then the occlusal points are smoothed after cutting to complete the final adjustment of the occlusion.



2. Sculpting the gingival form of the abutment:

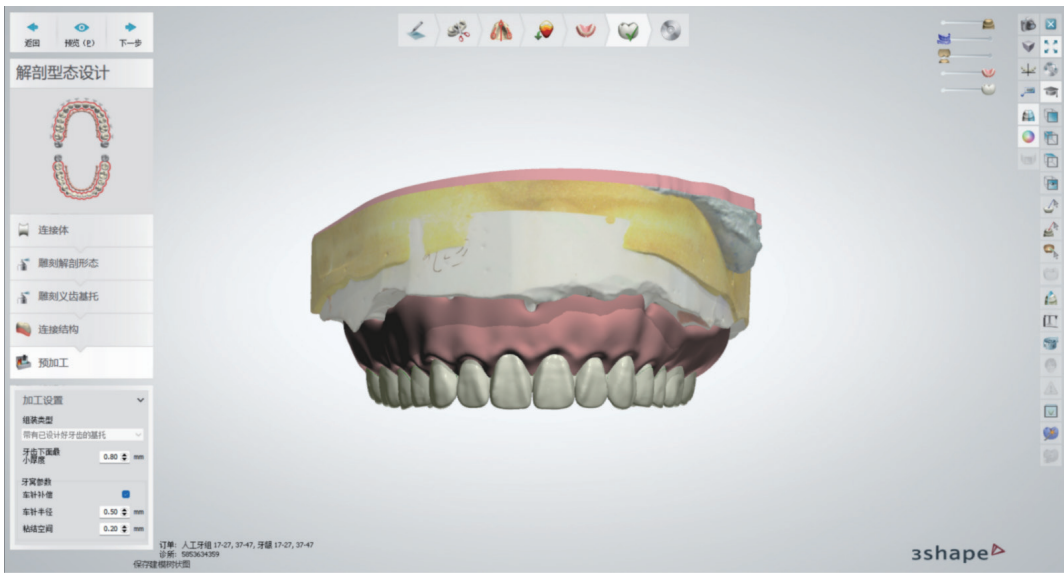


The gingival form of the abutment is trimmed by selecting the sculpting toolkit on the left side. Use the drag function to lift the gingival papilla position, and then use the “+” function to make the gingival form full and make the gingival margin. The denture triangle should be closed through the gingiva without gaps.

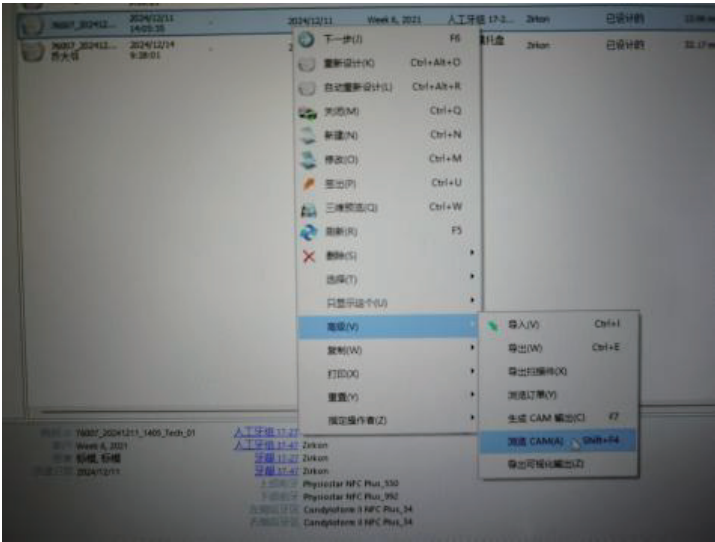


3.Pre-processing

The minimum thickness of the teeth underneath is adjusted to 0.8mm, and the bonding space is adjusted to 0.2mm, which is the best solution for adapting the Aidite complete denture.



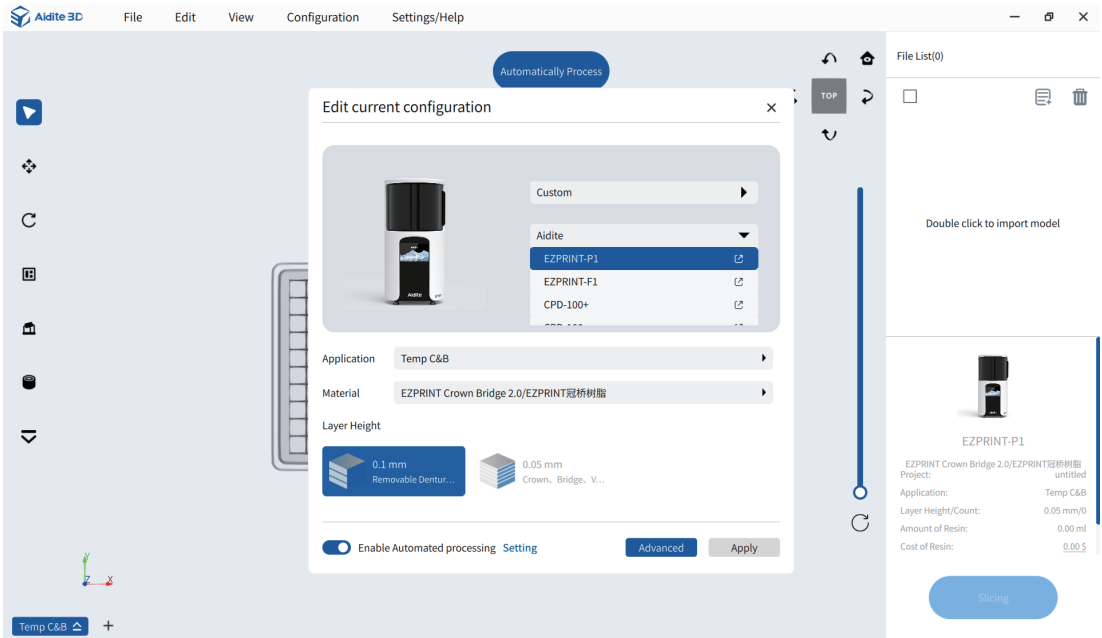
7 Complete the design and export the STL file



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76007_20241211_1405_Tech_01_2	2024/12/16 15:04	3D Object	7,658 KB
76007_20241211_1405_Tech_01_3	2024/12/16 15:04	3D Object	8,161 KB

1 Dental Layout: Aidite Dental

1.Dental Layout: Aidite Dental



(1) Select the composite ceramic crown/bridge printing parameters (note: full denture teeth parameters select EZPRINT Crown Bridge 2.0 Removable Denture), see Figure 1.

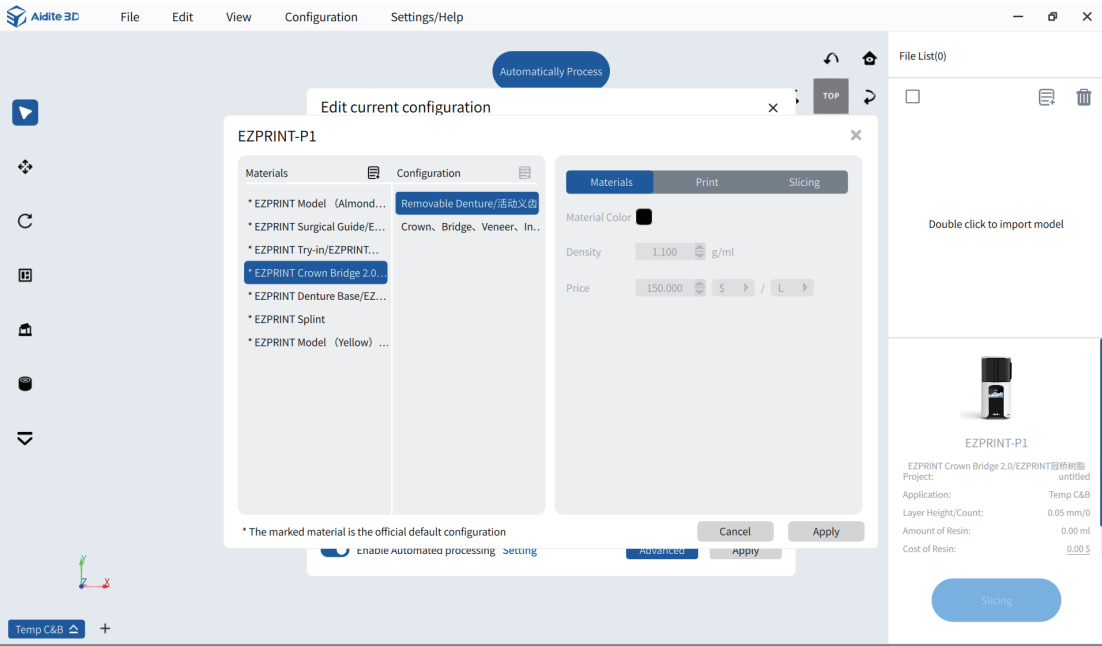


Figure 1

(2) Import the bridge STL file, see Figure 2.

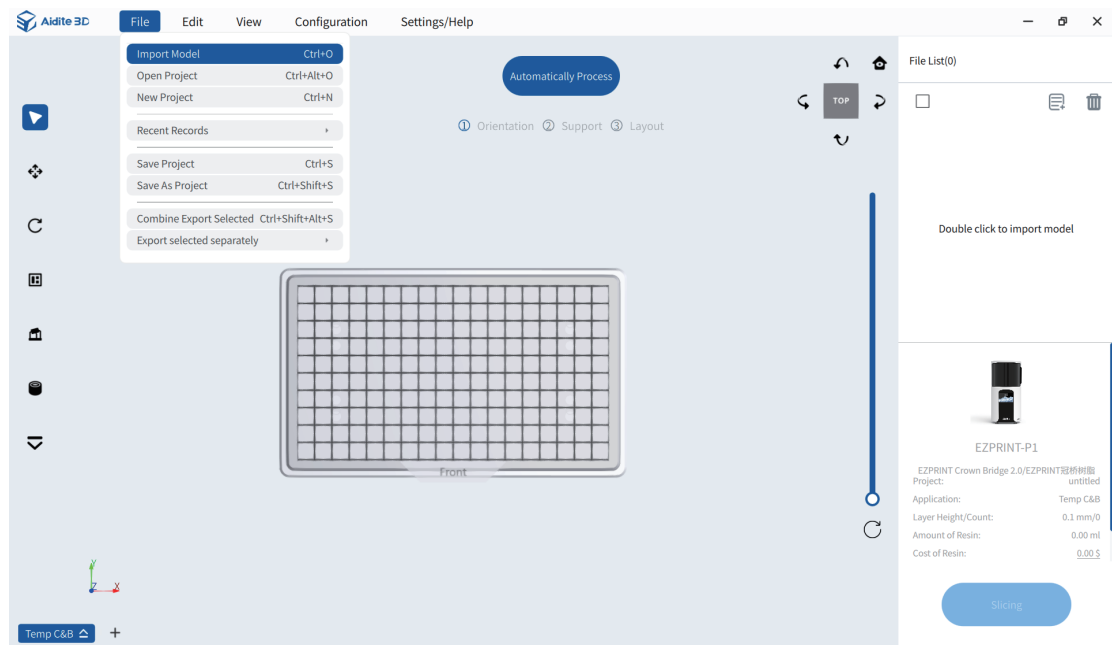


Figure 2

(3) Positioning of teeth: maxillofacial to the printing platform, horizontal positioning, single set of production angle Figure 3, 2 sets of denture angle into a 30-degree elevation angle Figure 4.

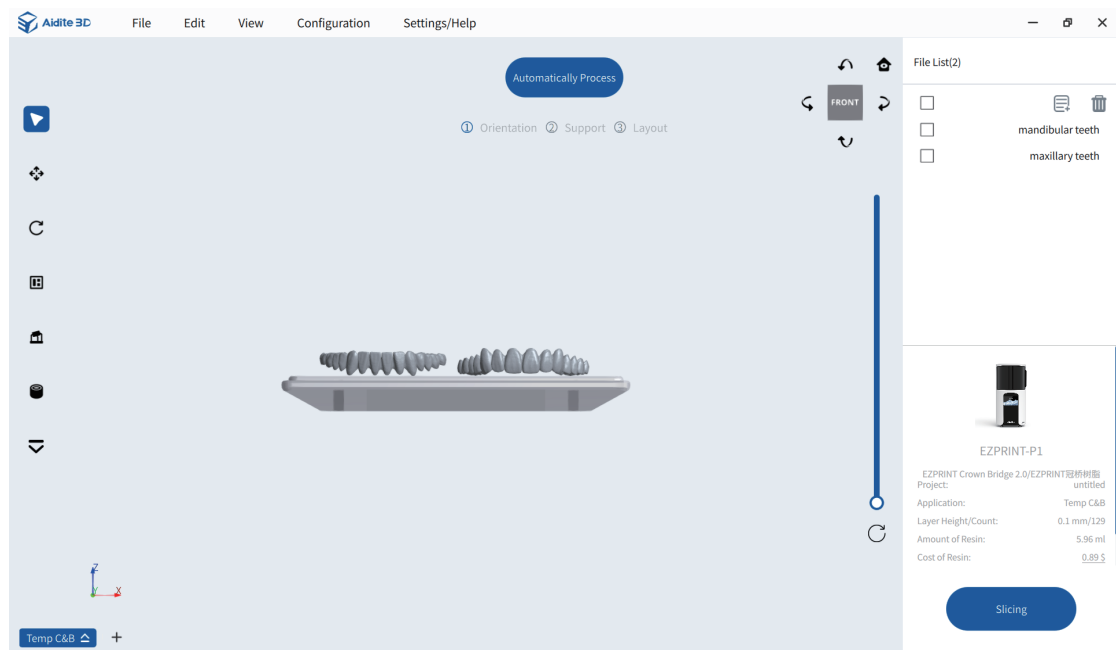


Figure 3

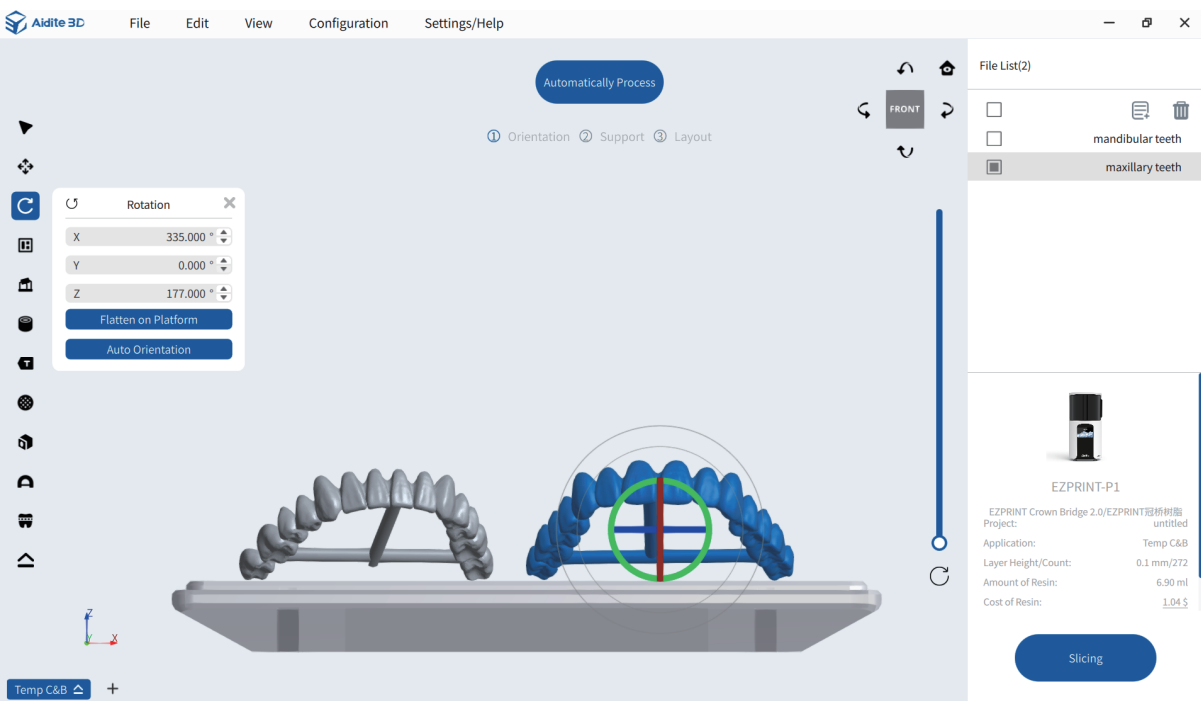


Figure 4

(4) Add support: Click the support dialog box Figure 5, select “automatic support” Figure 6.

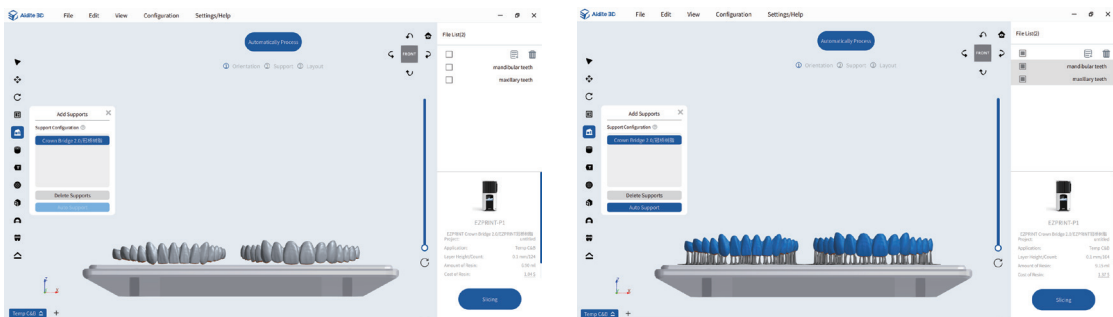


Figure 5

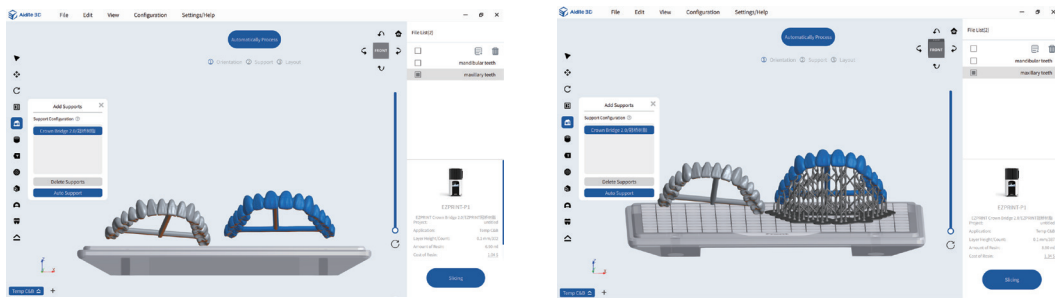


Figure 6

(5) Support automatically add finished, flip the view to the direction of the printing platform, or press the upper right corner of the BOTTOM  look at the image should be red-orange area should have uniform support Figure 7. The right side of the 1 area of red surface support for each tooth can be Figure 7, but the left side of the 2 area of green 4, 5, 6 teeth, support is not enough Figure 7, support needs to be added, you need to add 2-3 support in the red-orange area has not been supported by the part of the support Figure 8.

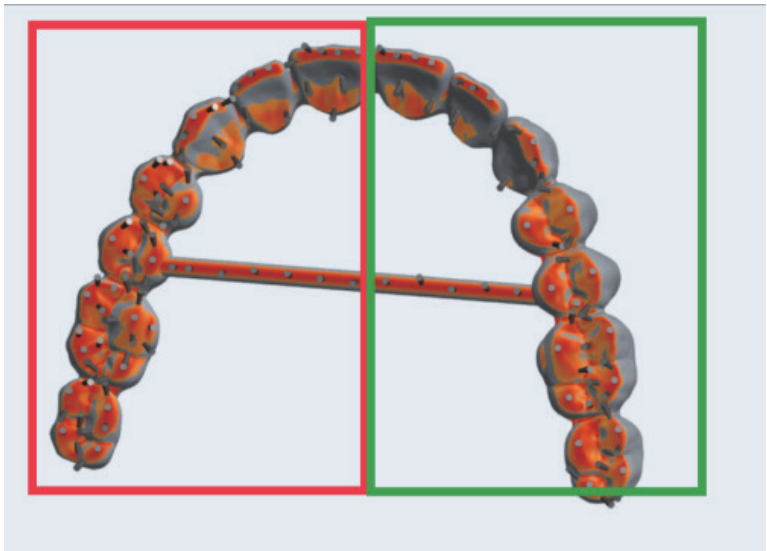


Figure 7

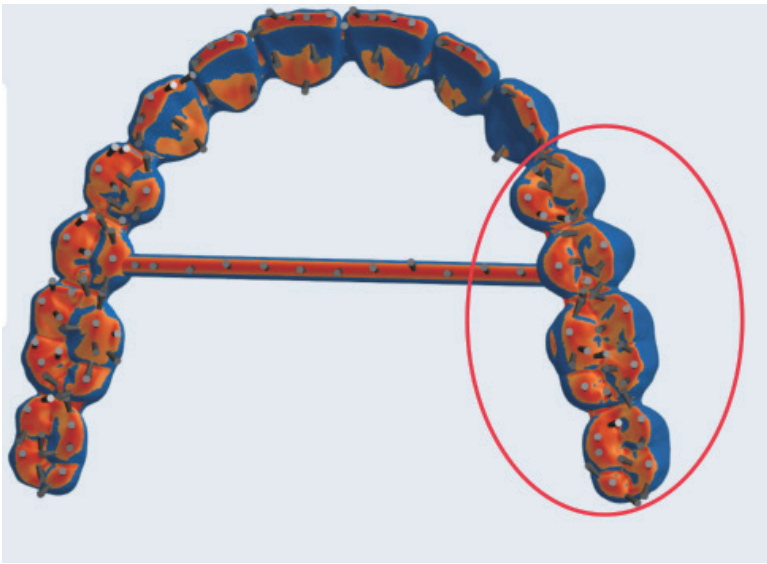


Figure 8

(6) To carry out the slicing before, check the bottom valve should be affixed to the printing platform, showing green for the bottom of the state Figure 9.



Figure 9

① the bottom of the display gray for the bottom is not posted, you need to click on the left side of the “placed at the bottom of the button” Figure 10.

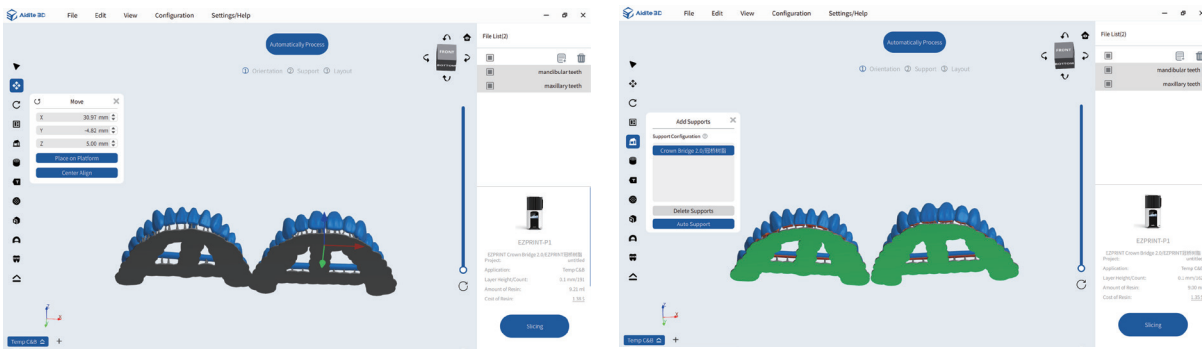


Figure 10

②Save to a USB flash drive or transfer to a folder via WIFI Figure 11.

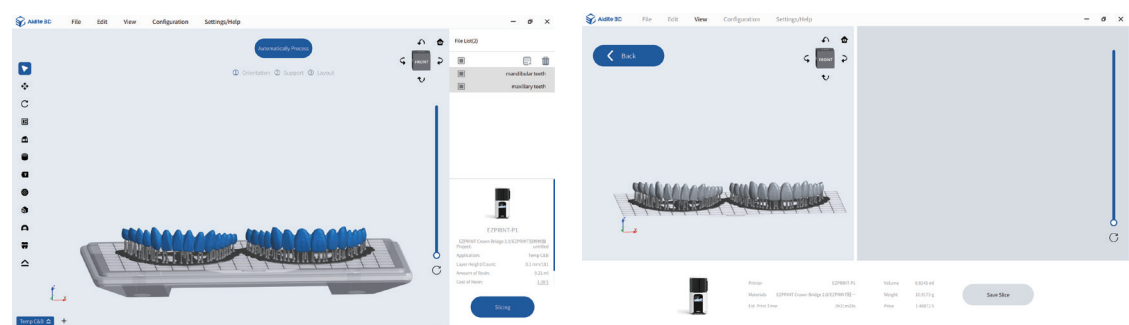


Figure 11

- (7) Printing to confirm the use of the environment:
- a. Yellow light environment, no vibration of equipment near the printer, the desktop is flat and does not shake.
 - b. The composite ceramic resin solution needs to be shaken for about 3min before pouring into the resin tank, and the liquid level needs to be between the MIN line and the MAX line, such as Figure 12.

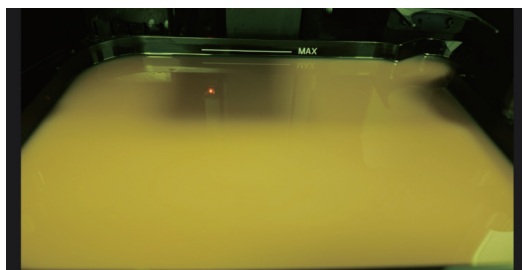
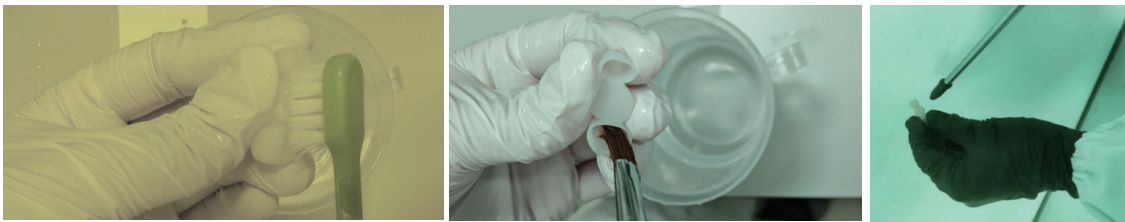


Figure 12

- c. Before printing, you need to check to make sure that the printing platform is clean and free of foreign objects and reliable installation.
- d. The printer temperature is set to 25 °C, 25 ± 2 °C to print.

(8) Cleaning:

In accordance with the concentration of more than 90% alcohol, and water mixing ratio of 1:1 mix of anhydrous ethanol and water, configure the cleaning solution, the cleaning solution poured into the turbine cleaner to clean for 5min, followed by the use of high-pressure air gun to blow off the residual resin and cleaning solution, crown and bridge restorations maxillofacial surface of the resin if the blowing is not clean, use a toothbrush dipped in alcohol to brush until the finished product is no longer reflecting the surface, that is, clean.



(9) Post-curing

Clean and blow-dry the composite ceramic bridge, jaw side up in the post-curing light box, select C&B curing program to start curing, curing end of the temperature down to 60 ° C before you open the door to take out.

2 Denture Base product use

1.Design requirements

Full mouth upper jaw does not need to need to add T-bar; full mouth lower jaw choose to add cross-bar, in the cusp and the second premolar molar molar choose to add a type of bar between the first molar and the second molar molar distal center to place the cross-bar. As shown in Figure 1.

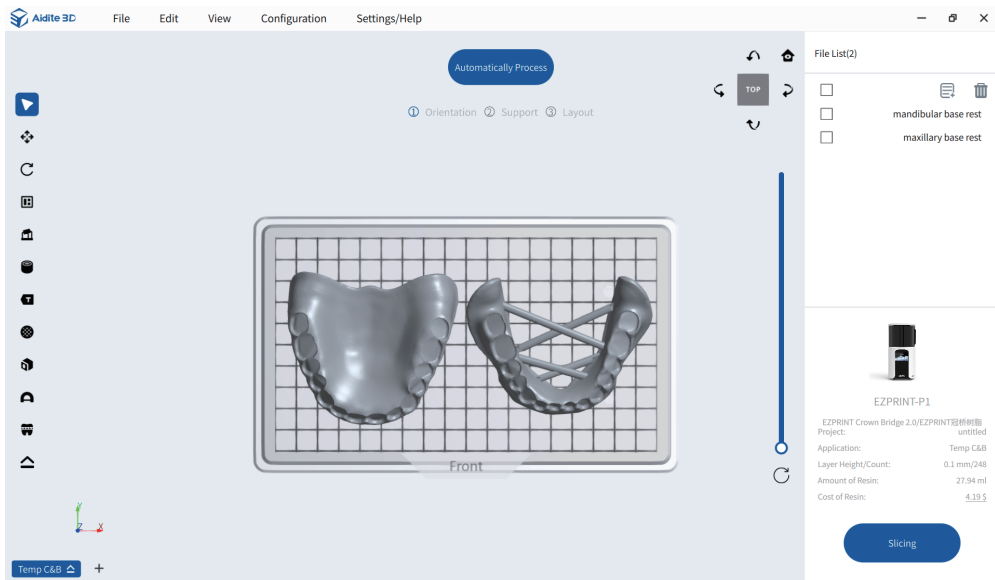


Figure 1

2.Typesetting

①Select the typesetting software

Double-click to open the Aidite Dental software and open the page in Figure 2.

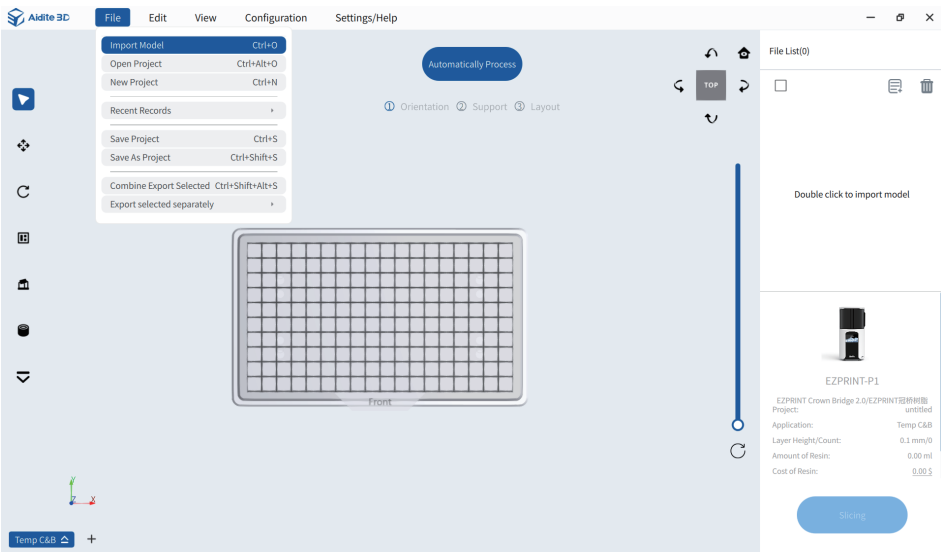


Figure 2

②Import data

Click on the file in Figure 2, click on Import Model, select the data to be imported, and then click on “Rotate” in the red box in Figure 3 to rotate the upper and lower jaws to the lip-side contact printing platform. Adjustment method for reference: first, adjust the lip-side contact printing platform of the abutment to be placed vertically, and then click “Rotate” to rotate 8° in the Y-axis direction, so as to make the tissue face the direction of the platform. The page after data adjustment is shown in Figure 4.

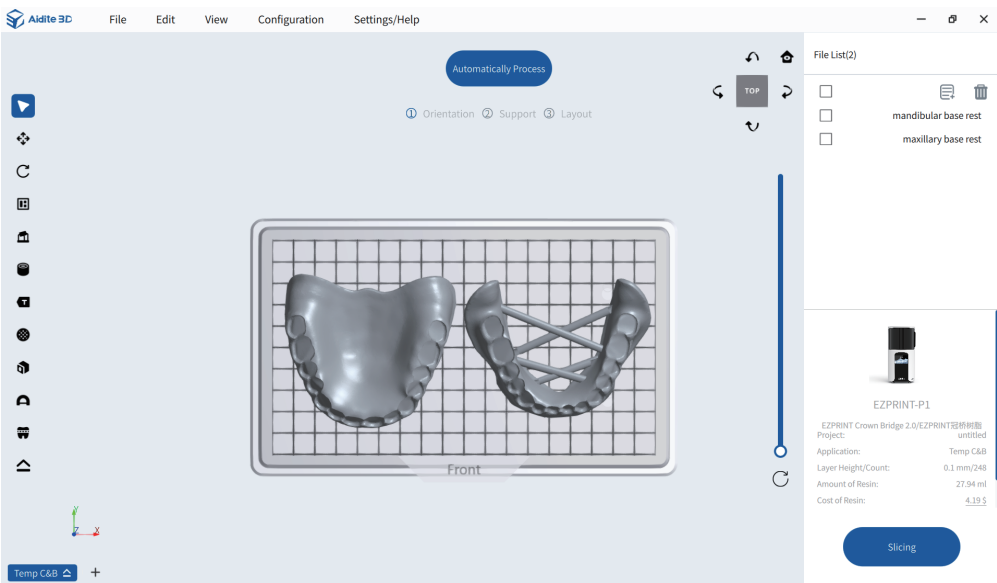


Figure 3

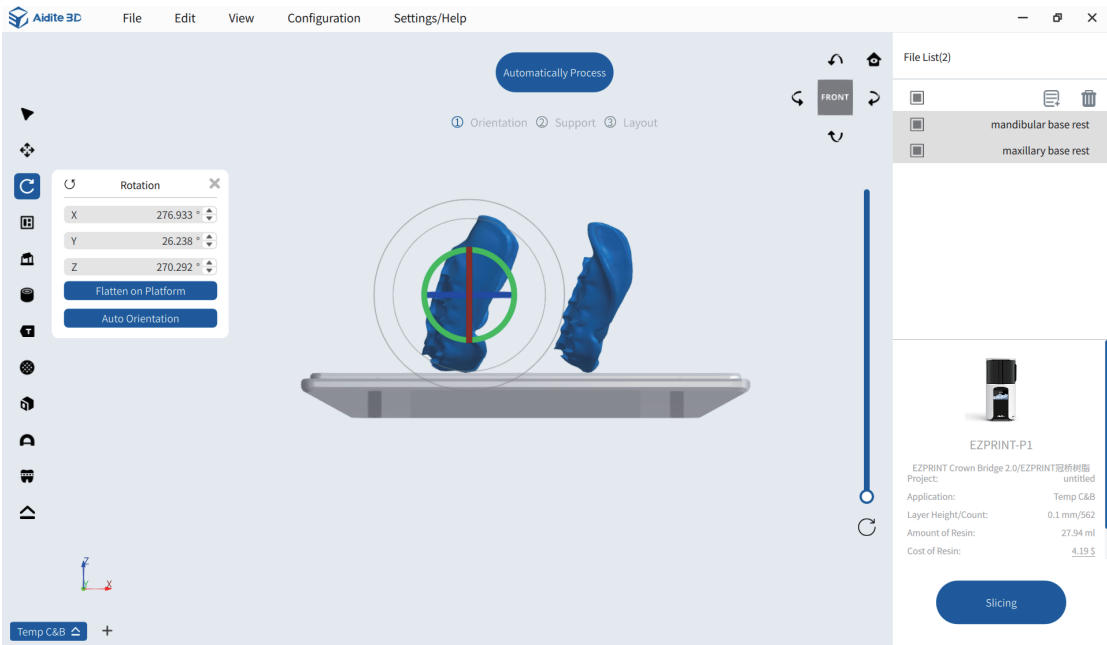


Figure 4

③Select the layout parameters

Click “Configuration” in Figure 5, the page of Material Selection and Configuration Selection will appear, select the printing parameters of Additive Manufacturing (Light Curing) Denture Base Resin, i.e., EZPEINT Denture base and click Apply.

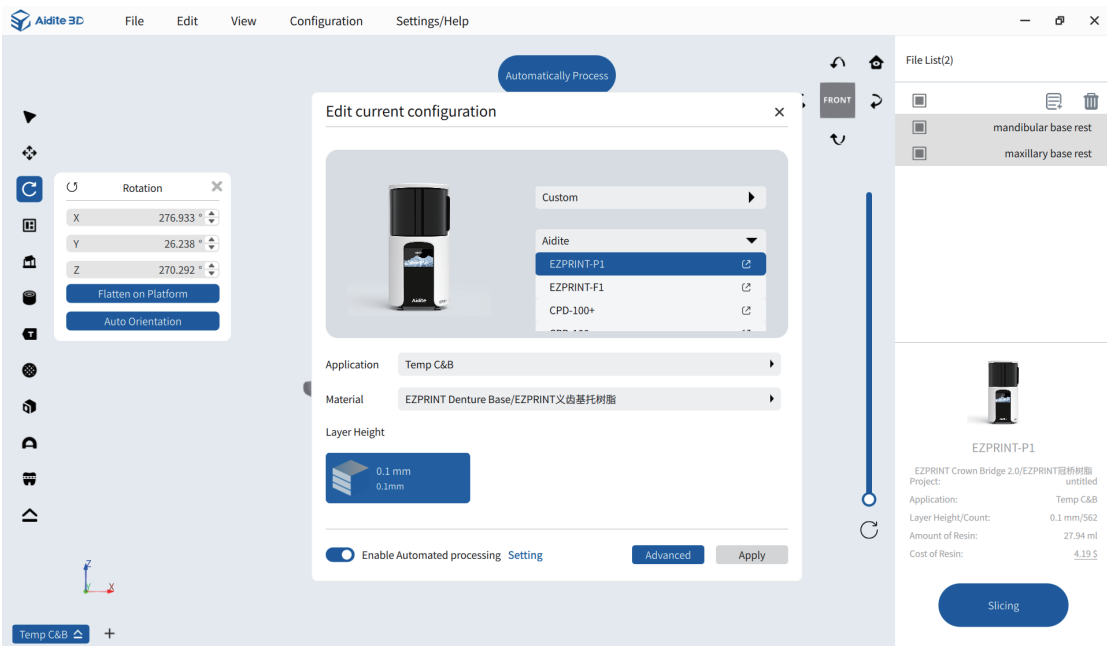


Figure 5

④Add support

Click on the icon in the red box in Figure 6, the support parameters will be displayed, as shown in Figure 7 page, click on the support “Step1-Heavy” automatic support, and then click on the support “Step2-Lighe” , automatic support, Click not to delete (Figure 8), after adding the support as shown in Figure 9.

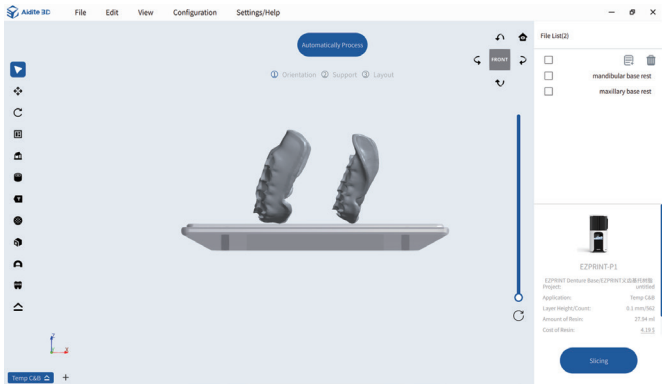


Figure 6



Figure 7

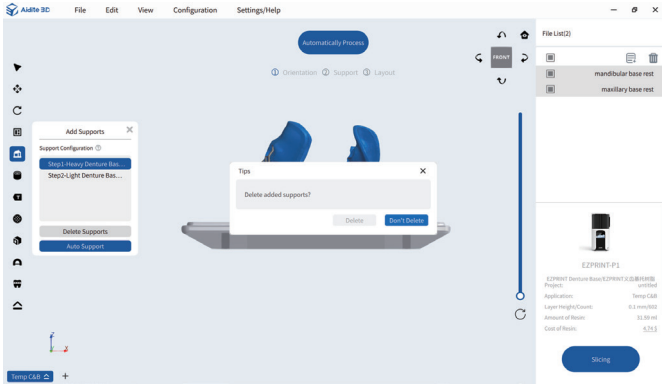


Figure 8

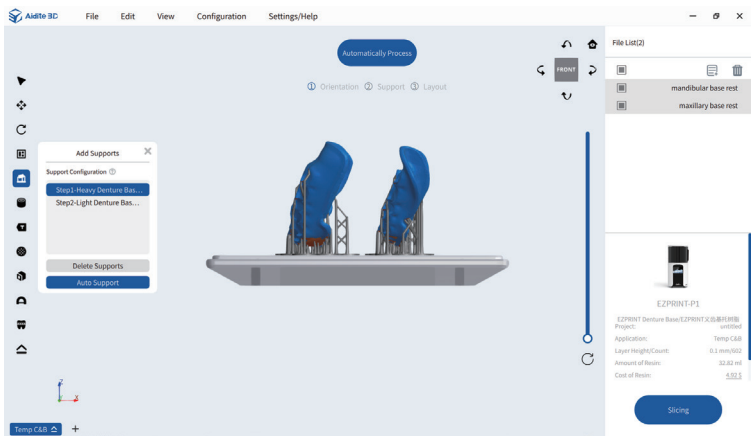


Figure 9

⑤After the support is added, the intra-alveolar and intra-organizational surface supports of the upper and lower jaws need to be deleted. Select the support to be deleted, as shown on the left side in Figure 10, and press Delete to delete it. The diagram after deleting the support is shown on the right side of Figure 10.

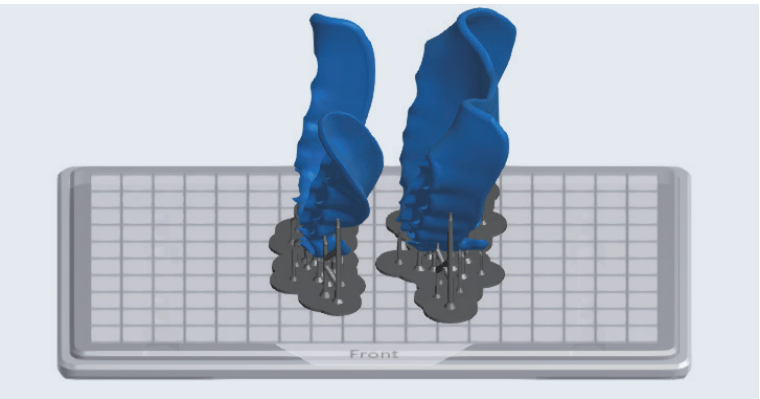
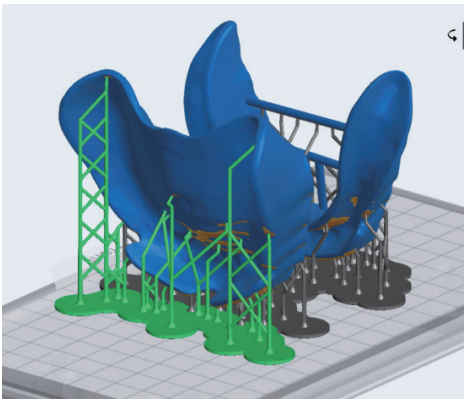
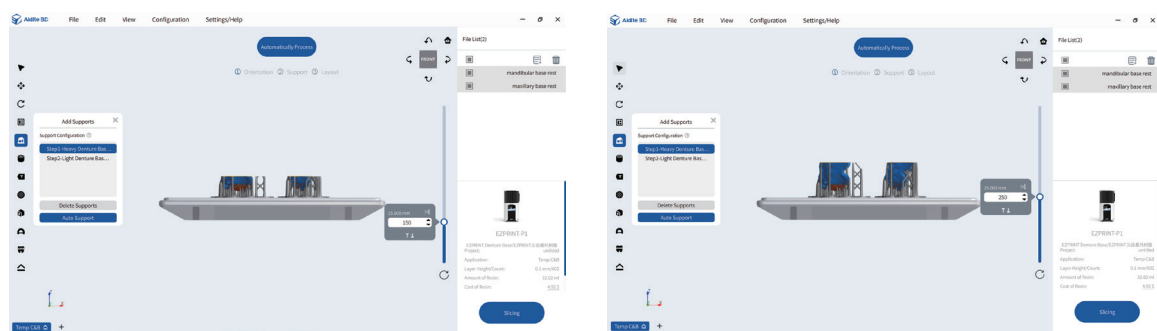


Figure 10

⑥In the 150 layer and 250 layer near, left and right each add a support. The operation mode is: click the support “Step2-Lighe” , the right side of the software will be adjusted to the number of layers of the 150 layer layer attachment, according to the figure to support the location of the left mouse button, that is, the support to add a successful, 250 layers of the same reason.



3.Slice

After adding the support, click “Slice” in Figure 11 to display Figure 12, then click “Save Slice” to select the root directory of the USB flash disk for saving, the file will be displayed as it is being written during the process, and it will be displayed as it has been written successfully after the saving process is completed

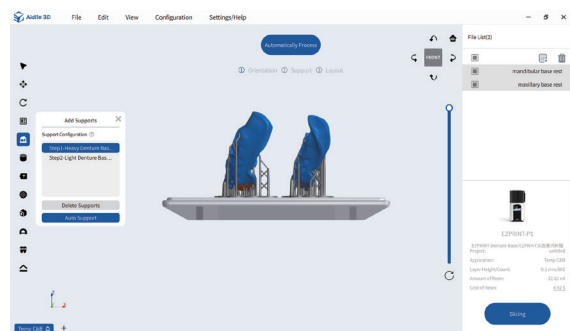


Figure11

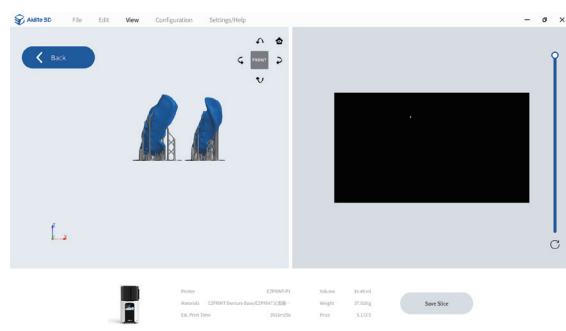


Figure12

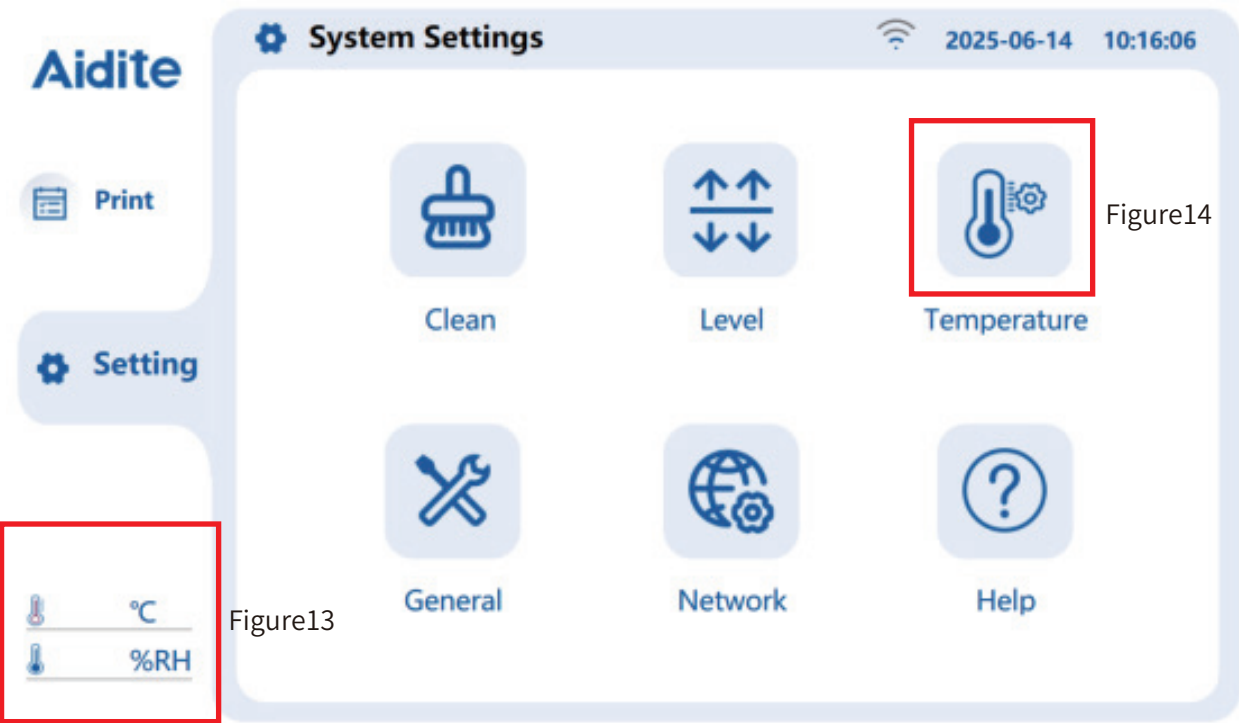
4. Printing Precautions

Confirm the use environment:

- (1) Yellow light environment, no vibrating equipment near the printer, and the desktop is flat and not shaking.
- (2) before pouring the base tray resin liquid into the resin tank needs to be shaken for about 3-5min, and the liquid level needs to be between the MIN line and MAX line.
- (3) before printing, you need to check to make sure that the print level is clean and free

of foreign objects and reliable installation.

- (4) the printer interface in the lower left corner of the temperature and humidity in the printer compartment, as shown in Figure 13, click on the red box “Temperature Settings” button, set the temperature to 33 °C, as shown in Figure 14, click to save, click on the red box in Figure 14 position, return to the main page.



- (5) Insert the USB flash drive with the slice file into the USB flash drive socket of the printer, and click the “Select File to Print” button in the upper left corner of the printer screen to enter the print file selection interface.

- Note:
- ① Shake the resin bottle for 3-5min before pouring it into the resin bath;
 - ② If the resin in the resin tank has been standing for more than 12h, you need to use a silicone spatula to stir the bottom of the tank back and forth for about 1min before you can print normally.

③Resin in the resin tank, the resin tank can not be placed in the resin tank for more than 48h, need to be poured back into the resin bottle within 48h to reshake 3-5min.

5. Shoveling parts and removing the support

After the end of the print, you need to remove the build platform from the printer, use the spatula to remove the printed parts from the build platform, and remove the support part by hand before cleaning. See Figure 15 for a schematic diagram.

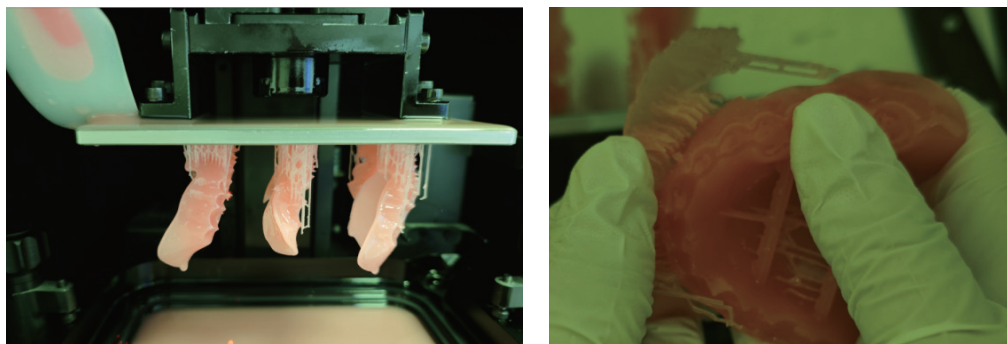


Figure 15

6.Cleaning

Put the print part into the beaker with alcohol, the height of the alcohol can cover the print part, pay attention to stay in the alcohol for the longest time not more than 1 minute, take out the print part in the non-heated cleaning machine to clean for 3 minutes, you can wear gloves to scrub the surface of the substrate resin, so that the surface of the substrate as far as possible, no residue of the resin is not cured. The total time of the print part in alcohol should not exceed 5 min. after removing the print part, use compressed air to blow dry the residual solvent on the surface of the print part as shown in Figure 16.



Figure 16

7.Post-curing

Temporarily uncured.

[Cautions/Warnings and Reminders]

- (1)Please pay attention to shake well before using the material.
- (2)If the product is placed in the resin tank for more than 12h without printing operation, it is necessary to use the silicone scraper to stir for at least 1min; if the product in the resin tank is not printed within 48h, it is necessary to pour back into the resin bottle.
- (3)When the resin tank resin $\geq 250\text{g}$ and resin liquid level $\geq 10\text{mm}$, can meet the printing of a full mouth.
- (4)Biocompatibility can only be ensured by the polymerization method required by the product specification.
- (5)Can only be used in the oral cavity in the polymerized state according to the product instructions.
- (6)Always keep the container sealed. Close the container immediately after each use.
- (7)The product is valid for 60 days after opening the bottle.

3 Try in product material

1.Typesetting

(1) Select typesetting software

Double-click to open the Aidite Dental software, click on the file in Figure 1, click on the import model, select the data that need to be imported, and then open the page in Figure 1 after the import is successful.

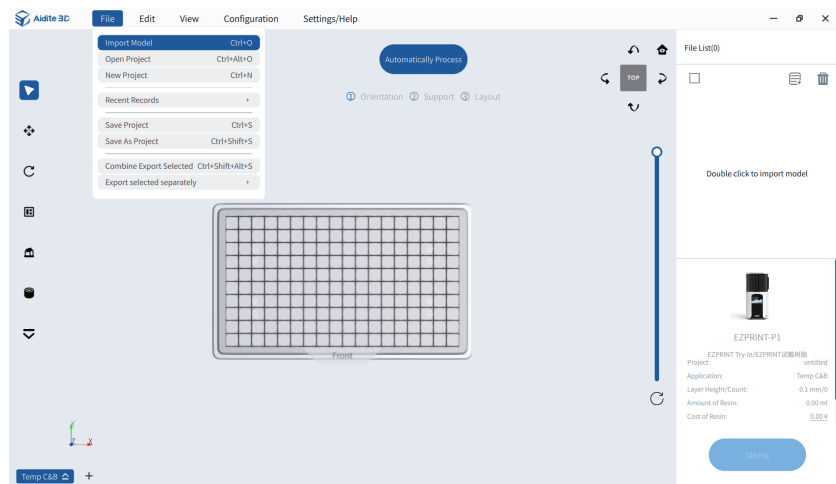


Figure 1

(2) Importing data

Click “Rotate” in the red box in Figure 2, and rotate the upper and lower jaws so that the lip side of the abutment touches the printing platform. Adjustment: Adjust the lip side of the abutment to contact the printing platform and place it vertically, then click “Rotate” and rotate the abutment by 15° in the Y-axis direction, so that the tissue is tilted in the direction of the platform. The page after data adjustment is shown in Figure 3.

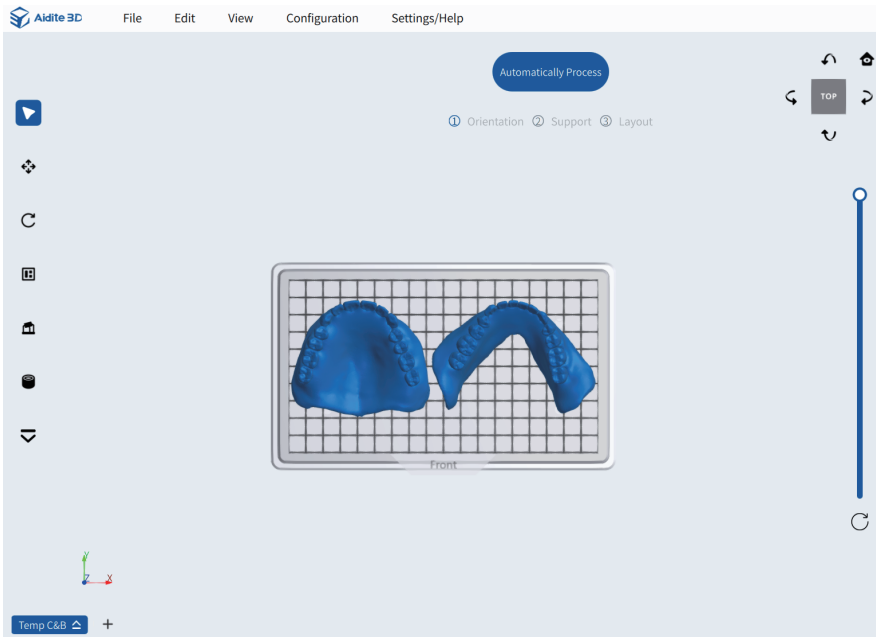


Figure 2

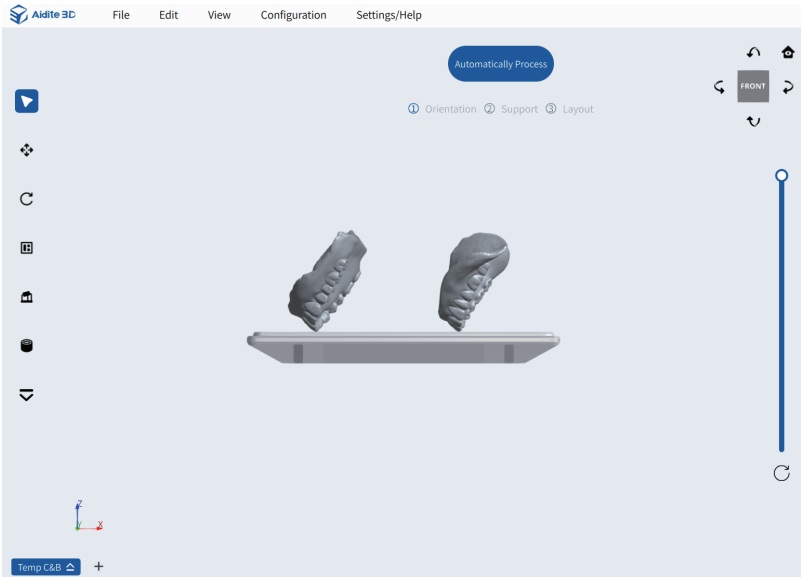


Figure 3

(3) Select layout parameters

Click “Configuration” in Figure 4, the page of material selection and configuration selection will appear, select the printing parameters of additive manufacturing (light-curing) try-in resin, i.e. Try it on, click Apply.

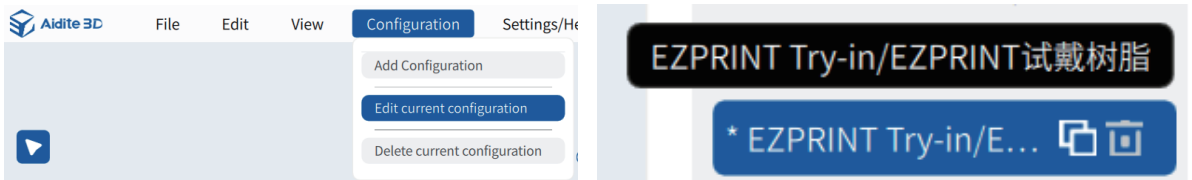


Figure 4

(4) Add support

Click on the red icon in Figure 5, the support parameters will be displayed, as shown in Figure 6, click on “Support”, and then click on “Auto Support” .

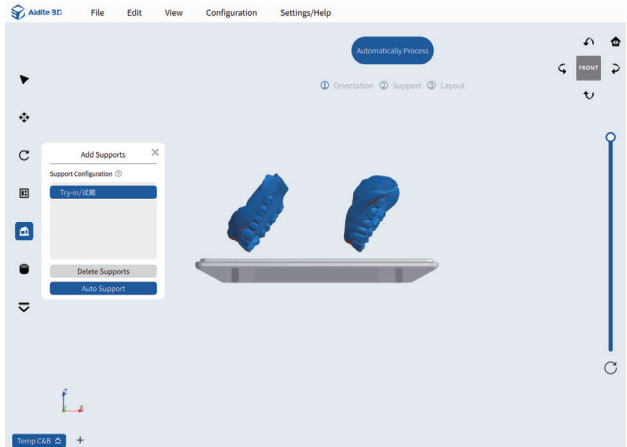


Figure 5

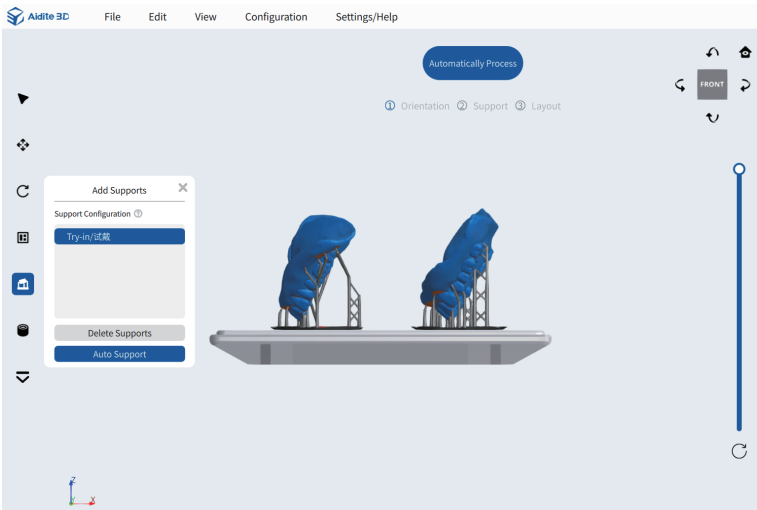


Figure 6

(5) After the support is added, the intra-alveolar and intra-tissue surface supports of the upper and lower jaws need to be deleted. Select the support to be deleted, as shown on the left side in Figure 7, and press the Delete key to delete it. The diagram after deleting the support is shown on the right side of Figure 7.

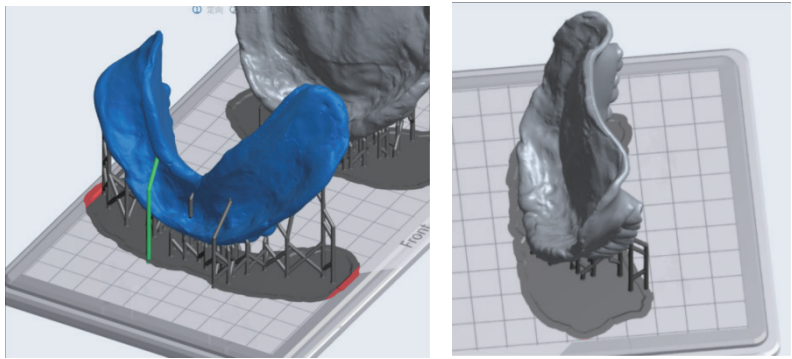


Figure 7

2.Slice

After the support is added, click “Slice” in Figure 8 to show the page in Figure 9, then click “Save Slice” to select the root directory of USB flash disk for saving, it shows that the file is being written during the process of saving, and it shows that the writing is successful after the saving is completed.



图8



图9

3.Material use requirements

(1) Yellow light environment, no vibrating equipment near the printer, the desktop is flat and does not shake.

Before pouring the test wear resin liquid into the resin tank needs to be shaken for about 1min, and the liquid level needs to be between the MIN line and MAX line, as shown in Figure 10.

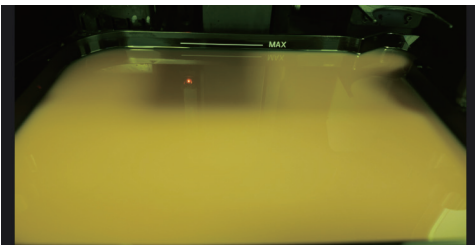


图10

(2) Before printing, you need to check to make sure that the printing platform is clean and free of foreign objects and reliable installation.

(3) Printer interface in the upper left corner of the temperature and humidity in the printer compartment, as shown in Figure 11, click on the red box showing the temperature of the button, set the temperature off, as shown in Figure 12, click on Save , return to the main page.

Insert the USB flash drive with the slice file into the USB flash drive socket of the printer. In the upper left corner of the printer screen, click on the “Select File Print” button to enter the print file selection interface, click on the “Print” machine into operation.

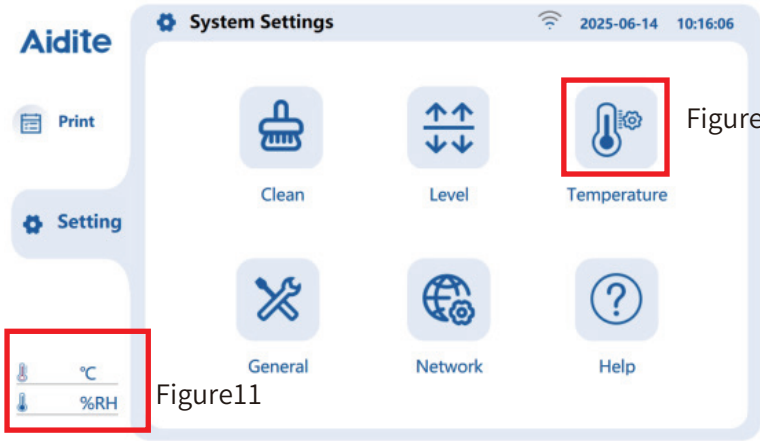


Figure12

Figure11

4. Spatula and Remove Support

After printing, you need to wipe off the residual resin with a clean silicone spatula, then remove the build platform from the printer, use the spatula to remove the printed parts from the build platform, and remove the support part by hand before cleaning.

5. Cleaning

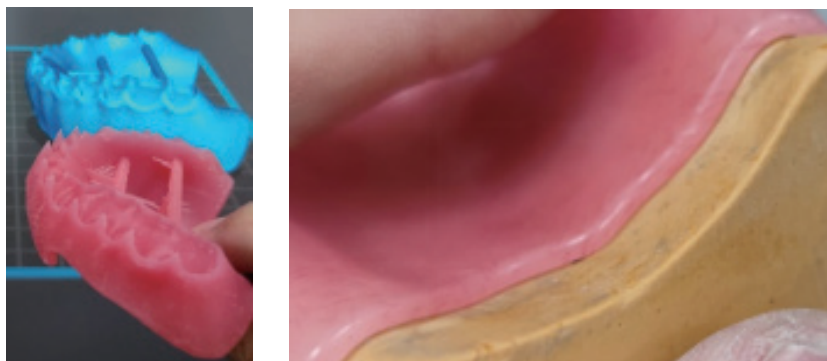
Put the print parts into the beaker with alcohol, the height of alcohol can cover the print parts, pay attention to stay in the alcohol in the longest time not more than 1 minute, take out the print parts in the non-heated washing machine to clean for 3 minutes, the total time of the print parts in the alcohol should not be more than 5 min. after removing the print parts, the use of compressed air to the surface of the print parts to dry the residual solvent.

6. Post-curing

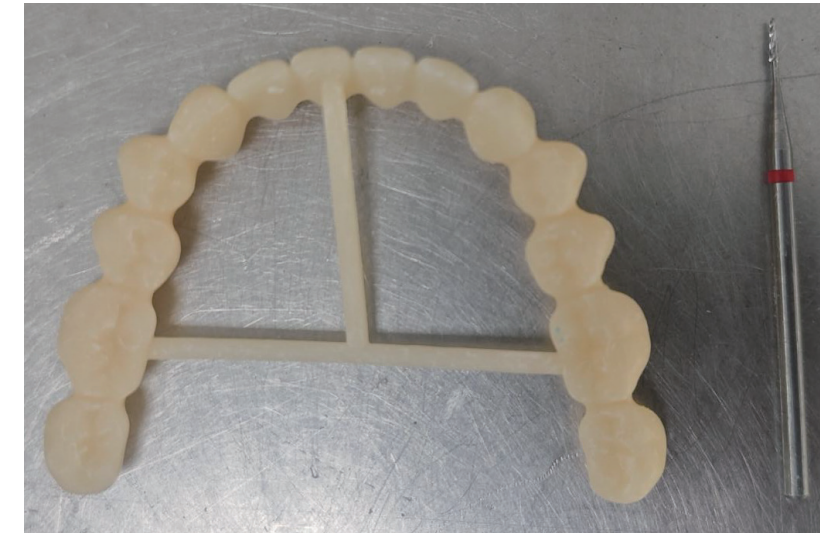
Place the cleaned and blow-dried try-in socket face up in the post-curing light box and select the “Tryin” curing program to start curing, one “Tryin” curing program for the front and one for the back.

4 Inspection/Polishing

Place the maxillary and mandibular abutments onto the model in turn to check for print integrity, fit, seating, warping, etc. Problems should not occur, and after checking that there are no problems, leave them in place for the time being.



(2) The cured teeth were abraded using GB0502Z and GB0101D to remove the support rods and excess support points;



(3) Check the occlusion and prepare for bonding

Prepare the teeth and the abutment, put the teeth into the abutment pit, affix the abutment band to the model, put the model on the frame to check whether there is any occlusion elevation, and the occlusion control is qualified within <0.5mm. After confirming the qualification, remove the teeth, put an appropriate amount of abutment liquid into the abutment pit, align the teeth into the abutment pit, and press gently to discharge the excess resin liquid. Use the dental applicator stick to scrape along the gingival junction, and hold a handheld curing lamp with a light source of 395nm to shine uniformly at the junction of the tooth and the abutment for 1min.



(4) Post-curing base

Place the cleaned and blow-dried abutment socket side up in the post-curing light box, select the Base curing program to start curing, and after curing, ensure that the temperature in the post-curing light box compartment is lowered to below 60°C, and you can take out the abutment restorations.

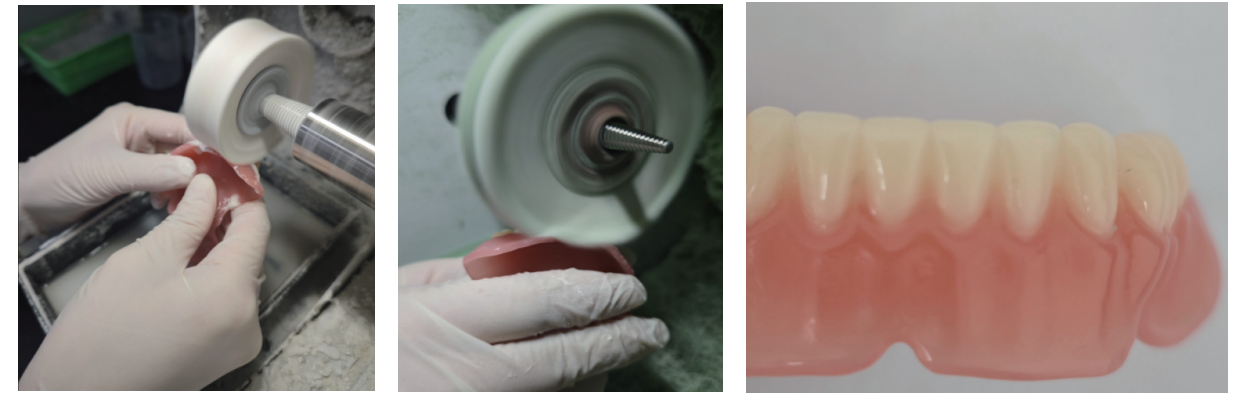


(5) Post-processing full denture

① Remove the palatal/lingual support bracket using the GB0502Z turning tool, then use the GB0101D or GB0102D turning tool to smooth the remnants of the protruding support bracket and trim the thickness of the abutment form.



② Use high speed polishing machine with resin base tray polishing powder to polish the denture base tray, polish to have mirror effect, rinse the residue of polishing powder with water, then use high speed polishing machine with polishing wax to brighten, use water vapor cleaning machine to clean the residue of polishing wax.



③ Final polishing of the completed denture base.

